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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,203	09/18/2003	Foster D. Hinshaw	3336.1008-001	7168

21005 7590 10/17/2006

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EXAMINER

LOVEL, KIMBERLY M

ART UNIT	PAPER NUMBER
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2167

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/667,203

Applicant(s)

HINSHAW ET AL.

Examiner

Kimberly Lovel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/2/06</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This communication is responsive to the Amendment filed 7 August 2006.
2. Claims 1-14 are pending in this application. Claim 1 is independent. In the Amendment filed 7 August 2006, claims 1, 9 and 11 have been amended. This action is made Final.
3. The rejections of claims 1-14 as being unpatentable over US Patent No 6,434,649 to Baker et al in view of US.PGPub 2005/0154705 to Zwiegincew et al have been maintained.

### ***Drawings***

4. The objections to the drawings are withdrawn as necessitated by the amendment.

### ***Claim Objections***

5. The objections to the claims are withdrawn as necessitated by the amendment.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**7. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No 6,434,649 to Baker et al in view of US PGPub 2005/0154705 to Zwiegincew et al.**

Referring to claim 1, Baker et al disclose a Data Streamer. In particular, Baker et al disclose a Programmable Streaming Data Processor (PSDP) which is arranged to perform primitive functions directly on data received from a streaming data interface (see abstract; column 1, lines 48-58; and Fig 1A, item 100 – the multimedia processor is considered to represent the programmable streaming data processor since it comprises of the same components and is a data processor for streaming which can be programmed), PSDP performing initial processing on a set of data comprising:

a streaming data interface, for receiving data from a streaming data source (see column 5, lines 59-68 and Fig 1, items 122 and 132);

a streaming interface First In First Out (FIFO) [first-in-first-out buffer], arranged for temporarily storing streaming data from the streaming data interface (see column 17, lines 25-45; column 18, lines 13-22; and Fig 7, item 716 – the interface uses a first-in-first-out buffer; according to the 5<sup>th</sup> Edition of Microsoft's Computer Dictionary, the

definition of a buffer states "a region of memory reserved for use as an intermediate repository in which data is temporarily held while waiting to be transferred between two locations or devices");

a data engine [data transfer switch], arranged to receive output data from the streaming interface FIFO (see column 20, lines 21-23 and Fig 1A, item 112 – the data transfer switch interface is considered to represent the *data engine*), the data engine for determining field boundaries therein, and for processing fields to select one or more fields to be output tuples, the data engine also containing logic to determine whether an output tuple is to be selected for further processing by additional processing Job Processing Units (see column 30, lines 6-10 – the data is either returned for further processing or it is retrieved from a memory location which is considered to represent outputting the tuple); and

an output First In First Out (FIFO) device, for forming tuples and temporarily storing them prior to conditionally forwarding them to the Job Processing Unit (see column 30, lines 22-32).

Baker et al disclose a Programmable Streaming Data Processor (PSDP) which is arranged to perform primitive functions directly on data received from a streaming data interface, however, Baker et al fail to explicitly teach the further limitation of the data engine wherein a use/lose decision value is utilized and the further limitation of the tuple generator assembling fields into the output tuple, and if the use/lose decision value indicates that such output tuple is to be discarded, for preventing such tuple set from being transferred. Zwiegincew et al disclose a method for manipulating

data including the further limitations of the data engine wherein a use/lose decision value is utilized (see [0029] and [0058] – the SQL generator is considered to represent the *data engine*) and the further limitation of the tuple generator assembling fields into the output tuple, and if the use/lose decision value indicates that such output tuple is to be discarded, for preventing such tuple set from being transferred (see [0058]) in order to improve data movement.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to Zwiegincew et al's method of manipulating data as a subcomponent to Baker et al's Data Streamer. One would have been motivated to do so to in order to improve data movement (Baker et al: see column 1, lines 49-67).

**Referring to claim 2**, the combination of Baker et al and Zwiegincew et al (hereafter Baker/Zwiegincew) discloses an apparatus as in claim 1 wherein the use/lose value indicates a result from logic processing of fields read from the streaming data interface (see Baker et al: see column 17, line 52 – column 18, line 12).

**Referring to claim 3**, Baker/Zwiegincew discloses an apparatus as in claim 1 wherein the use/lose decision value indicates a result from Transaction Identifier (TID) processing (Zwiegincew et al: see [0068] – item IDs is considered to represent the Transaction Identifier; and Baker et al: see column 29, lines 63-65).

**Referring to claim 4**, Baker/Zwiegincew discloses an apparatus as in claim 3 wherein the TID processing and data engine logic execute in parallel (Baker et al: see column 5, lines 11-15).

**Referring to claim 5**, Baker/Zwiegincew discloses an apparatus as in claim 1 wherein the output tuple is greater in length than an expected predetermined size, and the use/lose decision value is then used to set an overflow field in the output tuple (Baker et al: see column 18, lines 56-64).

**Referring to claim 6**, Baker/Zwiegincew discloses an apparatus as in claim 5 wherein the use/lose decision value is not asserted when a buffer local to the programmable data streaming processor is full; and means for appending an overflow filter bit to a tuple that indicates a transfer of a tuple that should be ignored (Baker et al: see column 18, lines 56-64).

**Referring to claim 7**, Baker/Zwiegincew discloses an apparatus as in claim 1 additionally comprising: a Direct Memory Access (DMA) interface, coupled to the output FIFO, to provide direct access to a memory in the Job Processing Unit (Baker et al: see column 6, lines 24-25 and column 19, lines 15-25).

**Referring to claim 8**, Baker/Zwiegincew discloses an apparatus as in claim 1 wherein the use/lose value is used to reset the output FIFO write pointer so any prior fields in the present tuple are discarded (Baker et al: see column 12, lines 18-34 – after the data is written, it is considered to be removed from the temporary storage of the buffer, therefore being deleted).

**Referring to claim 9**, Baker/Zwiegincew discloses an apparatus as in claim 1 wherein the overflow filter bit is inserted in a length field appended to record fragments (Baker et al: see column 34, lines 56-62).

**Referring to claim 10**, Baker/Zwiegincoew discloses an apparatus as in claim 1 wherein an invalid field is appended to a tuple to indicate the results of transaction ID processing (Baker et al: see column 12, line 62 – column 13, line 16).

**Referring to claim 11**, Baker/Zwiegincoew discloses an apparatus as in claim 10 wherein the invalid field indicates that the TID mode marks return tuple (Baker et al: see column 12, line 62 – column 13, line 16).

**Referring to claim 12**, Baker/Zwiegincoew discloses an apparatus as in claim 10 wherein the invalid field indicates that the tuple should not have been returned but the output FIFO overflowed (Baker et al: see column 31, lines 10-22 and column 34, lines 56-62).

**Referring to claim 13**, Baker/Zwiegincoew discloses an apparatus as in claim 1 further comprising: a register reflecting the final PSDP status which is read by the CPU to identify whether any overflow or TID status bits are set in any of the tuples (Baker et al: see column 29, line 63 – column 30, line 21).

**Referring to claim 14**, Baker/Zwiegincoew discloses an apparatus as in claim 1 wherein the use/lose decision value represents DeMorgan's Law reduction of multiple instructions (Baker et al: see column 5, lines 25-34).



***Response to Arguments***

8. Applicant's arguments filed 7 August 2006 have been fully considered but they are not persuasive.

9. On pages 12 and 15 applicants argue the following: It is believed that the Examiner failed to set forth a prima facie case of obviousness in regards to claims 1-14.

The examiner respectfully disagrees. According to MPEP 706.02(j):

To establish a prima facie case of obviousness, three basic criteria must be met.

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP § 2143 - § 2143.03 for decisions pertinent to each of these criteria.

It is believed that the examiner has met these three criteria in the rejection of independent claim 1. Claims 2-14 are dependent on 1.

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10. On pages 12-13, the applicants argue in regards to claim 1 the following: There is no suggestion in Baker et al of a streaming data interface, for receiving data from a streaming data source. In particular, the data streamer as claimed in Baker et al provides buffered data movements within the multimedia processor and is not streaming data interface for receiving data from a streaming data source as in the claimed invention.

The examiner respectfully disagrees. For further clarification see column 5, line 59 – column 6, line 30. The data streamer supports data transfer between memory or input/output devices. The input/output devices are considered to represent the data source and therefore the streamer is receives the data through an interface in order to transfer the data. Even though the data movement of Baker et al is within the multimedia processor, the citation does not conflict with the claim language.

11. On page 13, the applicants argue in regards to claim 1 the following: There is no suggestion in Baker et al of a streaming interface First In First Out (FIFO), arranged for temporarily storing streaming data from the streaming data interface, The first-in-first out buffer in Baker et al buffers data between the data transfer switch interface and the transfer engine, and is described as internal to the data streamer. In the claimed invention, the FIFO temporarily stores data from the streaming data interface and can be located external of the streaming data interface.

The examiner respectfully disagrees. Baker et al disclose a streaming interface First In First Out (FIFO) [first-in-first-out buffer], arranged for temporarily storing

streaming data from the streaming data interface (see column 17, lines 25-45; column 18, lines 13-22; and Fig 7, item 716 – the interface uses a first-in-first-out buffer; according to the 5<sup>th</sup> Edition of Microsoft's Computer Dictionary, the definition of a buffer states "a region of memory reserved for use as an intermediate repository in which data is temporarily held while waiting to be transferred between two locations or devices"). The first-in-first-out buffer of Baker et al temporarily stores data as does the FIFO of the present invention. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., FIFO can be located external to the data steaming interface) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

12. On page 13, the applicants argue in regards to claim 1 the following: There is no suggestion in Baker et al of a data engine, arranged to receive output data from the streaming interface FIFO.

The examiner respectfully disagrees. Figure 1 of Baker et al displays Data Transfer Switch 112 [data engine] receiving data from data streamer 122.

13. On page 13, the applicants argue in regards to claim 1 the following: Baker et al does not contain logic to determine whether an output tuple is to be selected for further processing by additional processing Job Processing Units.

The examiner respectfully disagrees. Baker et al discloses that data is either returned for further processing or it is retrieved from a memory location. The logic used to determine if the data is returned for further processing is considered to represent the logic.

14. On page 14, the applicants argue in regards to claim 1 the following: Baker et al does not even parse database records, never mind determine field boundaries or select fields to build output tuples.

The examiner respectfully disagrees. . In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., parsing database records) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

15. On page 14, the applicants argue in regards to claim 1 the following: There is no suggestion in Baker et al of a tuple generator for assembling fields into the output tuple, and if the use/lose decision value indicates that such output tuple is to be discarded, from preventing such tuple set from being transferred from the output FIFO to the memory of the JPU. Further, by the Examiner's own admission, Baker et al fails to explicitly teach this further limitation.

The examiner agrees, however, this argument considers Baker et al without regards to Zwiegincew et al, which discloses the limitation. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

16. On page 14, the applicants argue in regards to claim 1 the following: There is no suggestion in Baker et al of an output FIFO device, for forming tuples and temporarily storing them prior to conditionally forwarding them to the JPU.

The examiner respectfully disagrees. FIFO buffer temporarily stores the data.

17. On page 14, the applicants argue in regards to claim 2 the following: Baker et al fails to disclose use/lose values indicating a result from logic processing of fields read from the streaming data interface. Baker et al does not assign a use/lose value to determine whether the data engine should select it for an output tuple.

The examiner respectfully disagrees. This argument considers Baker et al without regards to Zwiegincew et al, which discloses the limitation. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

18. On page 14, the applicants argue in regards to claim 3 the following: Baker et al fails to disclose a Transaction Identifier.

The examiner respectfully disagrees. This argument considers Baker et al without regards to Zwiegincew et al. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

19. On page 14, the applicants argue in regards to claim 4 the following: Baker et al fails to disclose TID processing and data engine logic being executed in parallel.

The examiner respectfully disagrees. As mentioned above, Baker et al disclose that the processes of the apparatus have the ability to be executed in parallel.

20. On page 15, the applicants argue in regards to claim 6 the following: Baker et al fails to disclose not asserting the use/lose decision value when a buffer local to the programmable data streaming processor is full; and means for appending an overflow filter bit to a tuple that indicates a transfer of a tuple that should be ignored. The value of the valid bit used in Baker et al indicates whether the specific byte is valid or not. Baker et al does not however, not assert a use/lose decision value when a buffer local

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to the programmable data streaming processor is full and make no use of an overflow filter bit to a tuple that indicates a transfer of a tuple that should be ignored.

The examiner respectfully disagrees. The valid-bit memory as disclosed in column 18, lines 56-64 is considered to perform this function. The valid bit can determine if the buffer is full.

21. On page 15, the applicants argue in regards to claim 9 the following: Baker et al fails to disclose an overflow filter bit inserted in a length field appended to record fragments. Baker et al makes no reference to an overflow filter bit and does not inserts an overflow filter bit in a length field to record fragments.

The examiner respectfully disagrees. Baker discloses the limitation in column 12, line 62-column 13, line 16. Baker disclose an interrupt signal, which indicates a overflow.

***Conclusion***

22. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.



**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly Lovel whose telephone number is (571) 272-2750. The examiner can normally be reached on 8:00 - 4:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner  
Art Unit 2167

13 October 2006  
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